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Nota di contenuto	Chapter 1. Forensic DNA Typing: Inception, Methodology and Technical Advancements -- Chapter 2. STR Typing and Available Multiplex kits Including Validation methods -- Chapter 3. Sequential Advancements of DNA Profiling: An Overview of Complete Arena -- Chapter 4. Forensic DNAevidence: From Crime Scene to Conviction -- Chapter 5. RNA and DNA Based Identification of Body Fluids -- Chapter 6. Statistical softwares used in evaluation of Forensic DNAtyping -- Chapter 7. Ancient DNA analysis and its relevance in forensic DNA fingerprinting -- Chapter 8. Analyses of Second World War skeletal remains using a forensic approach -- Chapter 9. Molecular tools for analysis of Archaeological and Prehistoric Human Bones: a perspective of anthropological and forensic relevance -- Chapter 10. Usefulness of Mini-STRs in analyzing degraded DNA samples and their forensic relevance -- Chapter 11. Capillary electrophoresis issues in forensic

DNA typing -- Chapter 12. Human trafficking and DNA analysis -- Chapter 13. Autosomal STR Typing and Case Studies -- Chapter 14. Y Chromosome Short Tandem Repeats Typing -- Chapter 15. X-STRs: Potentials and Applications -- Chapter 16. Applications of Mitochondrial DNA in Forensic Science -- Chapter 17. SNP in Forensic DNA Testing -- Chapter 18. SNP Testing in Forensic Science -- Chapter 19. DNA analysis of domestic animals -- Chapter 20. DNA forensics in combating illegal wildlife trade: present, past and future perspectives -- Chapter 21. The utility of DNA Barcoding Technology in the Authentication of Medicinal Plants in Illegal Trade: A critical review -- Chapter 22. DNA barcoding in forensic mycology: concepts, limitations and future prospects -- Chapter 23. Applications of Next Generation Sequencing in forensic field -- Chapter 24. Utility and possibility of Next-Generation Sequencing in Forensic DNA typing -- Chapter 25. Oral Microbes: A hidden yet powerful evidence for futuristic forensic investigation -- Chapter 26. MALDITOF the 4th generation techniques still at its infancy to identify forensically important insects -- Chapter 27. Forensic DNA Phenotyping -- Chapter 28. Rapid DNA typing -- Chapter 29. Guidelines for collection and preservation of samples for Forensic DNA testing -- Chapter 30. Quality Control in Forensic DNA Typing -- Chapter 31. Legal aspects of Forensic DNA typing -- Chapter 32. DNA Databases -- Chapter 33. Building of the World's Largest DNA Database: the China Case -- Chapter 34. DNA Databases: Risks, Benefits, Privacy, and Human Rights.

Sommario/riassunto

The book explores the fundamental principles, advances in forensic techniques, and its application on forensic DNA analysis. The book is divided into three modules; the first module provides the historical prospect of forensic DNA typing and introduces fundamentals of forensic DNA typing, methodology, and technical advancements, application of STRs, and DNA databases for forensic DNA profile analysis. Module 2 examines the problems and challenges encountered in extracting DNA and generating DNA profiles. It provides information on the methods and the best practices for DNA isolation from forensic biological samples and human remains like ancient DNA, DNA typing of skeletal remains and disaster victim identification, the importance of DNA typing in human trafficking, and various problems associated with capillary electrophoresis. Module 3 emphasizes various technologies that are based on SNPs, STRs namely Y-STR, X-STR, mitochondrial DNA profiling in forensic science. Module 4 explores the application of non-human forensic DNA typing of domestic animals, wildlife forensics, plant DNA fingerprinting, and microbial forensics. The last module discusses new areas and alternative methods in forensic DNA typing, including Next-Generation Sequencing, and its utility in forensic science, oral microbes, and forensic DNA phenotyping. Given its scope, the book is a useful resource in the field of DNA fingerprinting for scientists, forensic experts, and students at the postgraduate level.